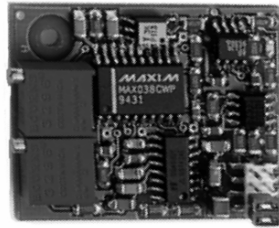


Reference Sine Oscillator Module for LIA-BV-150/LIA-MV-200 Series



<p>Features</p>	<ul style="list-style-type: none"> • Sine Wave Output from 5 Hz to 130 kHz • Adjustable Frequency and Amplitude • PLL for Synchronization to External Reference • Plug-In Module for Series LIA-BV(D)-150/LIA-MV(D)-200 Lock-In Amplifiers 	
<p>Applications</p>	<ul style="list-style-type: none"> • Reference Source for Lock-In Amplifier 	
<p>Block Diagram</p>	<p style="text-align: right; font-size: small;">BS01-1101-12</p>	
<p>Specifications</p>	<p><i>Test Conditions</i></p> <p>Frequency Range</p> <p>Manual Frequency Control</p> <p>Remote Frequency Control</p> <p>THD</p> <p>Temperature Coefficient</p> <p>Amplitude Range</p> <p>Amplitude Control</p> <p>Amplitude Accuracy</p> <p>Output Impedance</p> <p>Maximum Output Current</p> <p>Synchronization Input</p> <p>Sync. Input Voltage Level</p> <p>Sync. Input Current</p> <p>Supply Voltage</p> <p>Supply Current</p>	<p>$V_s = \pm 5 V, T_a = 25^\circ C$</p> <p>4 ranges, 5 Hz ... 130 kHz total (factory set at 1 kHz)</p> <p>4 range settings via jumpers 5-6 and 7-8, adjustable frequency within range via 25-turn trimpot</p> <p>4 range settings via digital control input pins 4 and 6, leave jumpers 5-6 and 7-8 open, adjustable frequency within range via control voltage 0 V ... + 10 V at pin 10 with reference to GND pin 8</p> <p>0.8 % typ.</p> <p>800 ppm/K</p> <p>allow 20 min warm-up time for good temperature stability</p> <p>0 ... 2 Vrms (factory set at 1 Vrms)</p> <p>25-turn trimpot</p> <p>100 ppm/K</p> <p>10 Ω (terminate with load > 1 kΩ)</p> <p>± 5 mA</p> <p>opto-coupler input with reference to synchronization ground pin 3</p> <p>Low: - 0.8 V ... + 1.2 V, High: + 3.5 V ... + 6 V</p> <p>0 mA @ 0 V, 6 mA @ + 5 V typ.</p> <p>± 5 V</p> <p>± 70 mA</p>

Reference Sine Oscillator Module for LIA-BV-150/LIA-MV-200 Series

Board	Dimensions Weight	31 mm x 39 mm 10 g (0.022 lbs)															
Temperature Range	Storage Temperature Operating Temperature	- 40 ... + 100 °C 0 ... + 60 °C															
Absolute Maximum Ratings	Power Supply Voltage	± 6 V															
Jumper Settings (JP6)	Frequency Range Selection	<table border="1"> <thead> <tr> <th>5 - 6</th> <th>7 - 8</th> <th>Frequency Range</th> </tr> </thead> <tbody> <tr> <td>close</td> <td>close</td> <td>5 Hz ... 90 Hz</td> </tr> <tr> <td>open</td> <td>close</td> <td>60 Hz ... 1.2 kHz</td> </tr> <tr> <td>close</td> <td>open</td> <td>900 Hz ... 18 kHz</td> </tr> <tr> <td>open</td> <td>open</td> <td>7 kHz ... 130 kHz</td> </tr> </tbody> </table>	5 - 6	7 - 8	Frequency Range	close	close	5 Hz ... 90 Hz	open	close	60 Hz ... 1.2 kHz	close	open	900 Hz ... 18 kHz	open	open	7 kHz ... 130 kHz
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	External Synchronization	<table border="1"> <thead> <tr> <th>3 - 4</th> <th>Synchronization</th> </tr> </thead> <tbody> <tr> <td>open</td> <td>on</td> </tr> <tr> <td>close</td> <td>off</td> </tr> </tbody> </table>	3 - 4	Synchronization	open	on	close	off									
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open	on																
close	off																
Jumper Positions Diagram	<p>The diagram shows a 10-pin header labeled JP6. Pins 1 through 8 are arranged in two rows of four. Pins 1 and 2 are connected by a jumper labeled 'Amplitude Adjust'. Pins 3 and 4 are connected by a jumper labeled 'Frequency Adjust'. Pins 5, 6, 7, and 8 are not connected. A positive terminal symbol (+) is shown above the header.</p>																
Connector	Connector Type	2 mm pitch socket, 10-pin															
	Oscillator Output	Pin 2: oscillator output Pin 8: output GND															
	Control Inputs	Pin 4: frequency range control input, MSB Pin 6: frequency range control input, LSB Pin 10: frequency control input Pin 1: external synchronization input Pin 3: external synchronization input GND															
	Power Supply	Pin 9: power supply - 5V Pin 5: power supply + 5V Pin 7: power supply GND															

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